

## Handheld ultraviolet germicidal system.

### DESCRIPTION

[Para 1] Figure #1 illustrates a portable hand held germicidal system, pen light sized. For a method of treating onychomycosis of the human nail. #1 used to treat fungal infection of the nail, defined as the nail matrix, bed or plate.

[Para 2] The system includes extending from a first end #2, a pen – light size quartz UV lamp #3 that emits light in the germicidal range. In the exemplary system the lamp #3 emits light at 254 nm. The lamp is powered through ballast circuitry #4 by a battery #5 which in the example system is four AA batteries. A quartz cover #6 surrounding the UV lamp #3 fits into a holder #7 that also acts as a shock absorber for the lamp #2. The holder #7 will compresses and bend as appropriate, should the cover #2 and the lamp #3 be bumped or jarred within reason. A plastic UV filter #8 securely mounted to only one side of the pen is used to shield the user's eyes from the UV rays.

[Para 3] An adult hand safety sensor #10 which is incorporated in a continuity sensor circuit #4 which is connected to switches #4 between the lamp #3 and the ballast circuitry #4 and the batteries #5 prevents the UV lamp from turning on until the unit is firmly gripped by an adults hand.

[Para 4] The plastic UV filter #8 protects the user who is holding the device #1 from harmful levels of the UV radiation, which might otherwise adversely affect his or her eyes.

[Para 5] The sensor #10 may, for example, be a capacitive – type sensor that senses the difference in capacitance of the moist adult hand and the surrounding air. When the sensor determines that it is firmly gripped, which necessarily means that the unit #1 is firmly gripped by an adults hand, the sensor closes the switches and allows the lamp to be turned on.